

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ron Jacobs, Reg# 50,142 on 12/15/09.

Claims 2-4, 11, 12, 23-39 are pending in this application. Claims, 1, 5-10, 13-22 have been cancelled. Claims 12, 23, 29 are amended.

The application has been amended as follows:

1. (Canceled)

2. (Previously Presented) The system as set forth in claim 23, wherein said standard source fields include an application instance, an application name, a device name, a person, and a group, wherein said standard source fields are set to wildcards by default for said template events for retrieving said posted event, and wherein said target fields are set to wildcards by default for said posted events.

3. (Previously Presented) The system as set forth in claim 23, wherein said set of unordered named fields of each of said events includes multiple standard fields,

wherein said standard fields comprise an EventType, a SequenceID, a TimeToLive, and a TimeStamp.

4. (Previously Presented) The system as set forth in claim 23, wherein said post and said template values of said unordered named fields can be marked as a formal value or a virtual value, wherein each of said unordered named fields marked as said formal value matches any value in said matching of said posted event with said template event, and wherein each of said unordered named fields marked as said virtual value is ignored in said matching of said posted event with said template event.

5-10. (Canceled)

11. (Previously Presented) The system as set forth in claim 23, wherein said retrieve function retrieves one of said posted events at most once, and wherein said retrieve function retrieves the same of said posted events based on a first-in-first-out per source ordering.

12. (Currently Amended) The system as set forth in claim 23, further comprising a restart function for automatically reconnecting one or more of said clients to said server.

13-22. (Canceled)

23. (Currently Amended) A computer system for exchanging events in an interactive workspace, comprising:

(a) a plurality of heterogeneous software applications, called clients, wherein said clients are run by a plurality of heterogeneous machines of said interactive workspace;

(b) a server for coordinating exchanges of a plurality of events between said clients, wherein each of said events comprises a set of unordered named fields and wherein each of said unordered named fields of each of said events comprises a post value and a template value;

(c) a network for connecting said server and said plurality of clients;

(d) a post function for allowing each of said clients to assign one or more of said post values to said unordered named fields of one of said events and to post ~~the~~ ~~same of~~ said events, wherein said posted event is posted on said server; and

(e) a retrieve function for allowing each of said clients to retrieve said posted event from said server, wherein said retrieve function allows each of said clients to assign one or more of said template values to said unordered named fields of one of said events, referred to as a template event, wherein said template value of one of said unordered named fields of said template event specifies a matching requirement on said post values of the same of said unordered named fields of said posted events, wherein said posted event is retrieved based on

matching said one or more post values of said unordered named fields of said posted event with said one or more template values of said unordered named fields of said template event, and wherein said matching ignores a field order of some or all of said unordered named fields of said posted event and said template event; wherein said set of unordered named fields of each of said events comprises multiple standard source fields, wherein said set of unordered named fields further comprises a target field corresponding to each of said multiple standard source fields, wherein said standard source fields are associated with said clients posting said events, wherein said target fields are associated with said clients retrieving said events, and wherein said standard source fields and said corresponding target field are used for routing said events between said clients.

24. (Previously Presented) The system as set forth in claim 23, wherein said set of unordered named fields of said posted event comprises an expiration field for determining an expiration time of said posted event.

25. (Previously Presented) The system as set forth in claim 23, further comprising a query function for allowing each of said clients to register a query template event onto said server and to assign one or more values to said unordered named fields of said query template event, wherein said posted event is returned to said client that registered said query template event based on matching said one or more values of said unordered named fields of said

posted event and said one or more values of said unordered named fields of said query template event, and wherein said posted event is returned to said client that registered said query template event only if said posted event is posted after said query template event is registered.

26.(Previously Presented) The system as set forth in claim 25, wherein said query function allows each of said clients to unregister said query template event, wherein said query template event is removed from said server when said query template event is unregistered.

27. (Previously Presented) The system as set forth in claim 23, wherein one of said clients posting one of said posted events does not directly communicate with said client retrieving the same of said posted events.

28. (Previously Presented) The system as set forth in claim 23, wherein said interactive workspace of said plurality of heterogeneous machines is in a bounded physical environment.

29. (Currently Amended) A method for exchanging events in an interactive workspace, comprising:

(a) having a plurality of heterogeneous software applications, called clients, wherein said clients are run by a plurality of heterogeneous machines of said interactive workspace;

(b) having a server for coordinating exchanges of a plurality of events between said clients, wherein each of said events comprises a set of unordered named fields, and wherein each of said unordered named fields of each of said events comprises a post value and a template value;

(c) connecting said server and said plurality of clients through a network;

(d) providing a post function for allowing each of said clients to assign one or more of said post values to said unordered named fields of one of said events and to post ~~the same of~~ said events, wherein said posted event is posted on said server; and

(e) providing a retrieve function for allowing each of said clients to retrieve said posted event from said server, wherein said retrieve function allows each of said clients to assign one or more of said template values to said unordered named fields of one of said events, referred to as a template event, wherein said template value of one of said unordered named fields of said template event specifies a matching requirement on said post values of the same of said unordered named fields of said posted events, wherein said posted event is retrieved based on matching said one or more post values of said unordered named fields of said posted event with said one or more template values of said unordered named fields of said template event, and wherein said matching

ignores a field order of some or all of said unordered named fields of said posted event and said template event; wherein said set of unordered named fields of each of said events comprises multiple standard source fields, wherein said set of unordered named fields further comprises a target field corresponding to each of said multiple standard source fields, wherein said standard source fields are associated with said clients posting said events, wherein said target fields are associated with said clients retrieving said events, and wherein said standard source fields and said corresponding target field are used for routing said events between said clients.

30. (Previously Presented) The method as set forth in claim 29, wherein said set of unordered named fields of said posted event comprises an expiration field for determining an expiration time of said posted event.

31. (Previously Presented) The method as set forth in claim 29, further comprising providing a query function for allowing each of said clients to register a query template event onto said server and to assign one or more values to said unordered named fields of said query template event, wherein said posted event is returned to said client that registered said query template event based on matching said one or more values of said unordered named fields of said posted event and said one or more values of said unordered named fields of said query template event, and wherein said posted event is

returned to said client that registered said query template event only if said posted event is posted after said query template event is registered.

32. (Previously Presented) The method as set forth in claim 31, wherein said query function allows each of said clients to unregister said query template event, wherein said query template event is removed from said server when said query template event is unregistered.

33. (Previously Presented) The method as set forth in claim 29, wherein said standard source fields include an application instance, an application name, a device name, a person, and a group, wherein said standard source fields are set to wildcards by default for said template events for retrieving said posted events, and wherein said target fields are set to wildcards by default for said posted events.

34. (Previously Presented) The method as set forth in claim 29, wherein said set of unordered named fields of each of said events comprises multiple standard fields, wherein said standard fields comprise an EventType, a SequenceID, a TimeToLive, and a TimeStamp.

35. (Previously Presented) The method as set forth in claim 29, wherein said post and said template values of said unordered named fields can be marked as a

formal value or a virtual value, wherein each of said unordered named fields marked as said formal value matches any value in said matching of said posted event with said template event, and wherein each of said unordered named fields marked as said virtual value is ignored in said matching of said posted event with said template event.

36. (Previously Presented) The method as set forth in claim 29, wherein said retrieve function retrieves one of said posted events at most once, and wherein said retrieve function retrieves the same of said posted events based on a first-in-first-out per source ordering.

37. (Previously Presented) The method as set forth in claim 29, further comprising automatically reconnecting one of said clients to said server if the same of said client disconnects from said network.

38. (Previously Presented) The method as set forth in claim 29, wherein one of said clients posting one of said posted events does not directly communicate with said client retrieving the same of said posted events.

39. (Previously Presented) The method as set forth in claim 29, wherein said interactive workspace of said plurality of heterogeneous machines is in a

bounded physical environment.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: The prior art in combination does not teach,

"A computer system for exchanging events in an interactive workspace, comprising:

(a) a plurality of heterogeneous software applications, called clients, wherein said clients are run by a plurality of heterogeneous machines of said interactive workspace;

(b) a server for coordinating exchanges of a plurality of events between said clients, wherein each of said events comprises a set of unordered named fields and wherein each of said unordered named fields of each of said events comprises a post value and a template value;

(c) a network for connecting said server and said plurality of clients;

(d) a post function for allowing each of said clients to assign one or more of said post values to said unordered named fields of one of said events and to post said events, wherein said posted event is posted on said server; and

(e) a retrieve function for allowing each of said clients to retrieve said posted event from said server, wherein said retrieve function allows each of said clients to assign one or more of said template values to said unordered named fields of one of said events, referred to as a template event, wherein said template value of one of said unordered named fields of said template event specifies a

matching requirement on said post values of the same of said unordered named fields of said posted events, wherein said posted event is retrieved based on matching said one or more post values of said unordered named fields of said posted event with said one or more template values of said unordered named fields of said template event, and wherein said matching ignores a field order of some or all of said unordered named fields of said posted event and said template event; wherein said set of unordered named fields of each of said events comprises multiple standard source fields, wherein said set of unordered named fields further comprises a target field corresponding to each of said multiple standard source fields, wherein said standard source fields are associated with said clients posting said events, wherein said target fields are associated with said clients retrieving said events, and wherein said standard source fields and said corresponding target field are used for routing said events between said clients."

In traditional tuple space system, there are a collection of fields where each field has a type, a value, and a name and the meaning of the value is determined by how the event is used. The present invention, also have events with a set of fields, however each field now has a type, name, post value and template value. There are two values present instead of the one value in traditional system. Having a post *and* a template value for each field enables functionalities not possible when the field has only one of a post value or a template value. For example, having both post and template values for each field allows for events to be duplicated and used as templates for further action. With both post and template values, events can be used to compare updates and

changes between multiple received events. This functionality is not possible in existing tuplespaces. Also, taking into consideration, the present invention's field are always referred to by name and type rather than by their index and type as in the standard tuplespace model.

NOTE: As per claim 23, 29 includes "a computer system" and "server", described in para.0014, 0300, are statutory since a "computer system" and "server" are hardware as known to one ordinary skill in the art, e.g.machines.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

/Hassan Phillips/
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